

CLAIMS

What is claimed is:

Sub. 1. A water protection system apparatus for detecting and stopping a flow of water,
a1 comprising:

5 a power supply for generating an electrical signal;

a water ionization switch connected to the power supply, wherein the ionization ?
switch selectively conducts the electrical signal when exposed to water,

the ionization switch including an initially dry non-conductive crystallized
compound, wherein the compound ionizes to form an electrolyte when combined with
water; and

a controlled valve assembly connected to the power supply and the ionization
switch, wherein the valve assembly stops the flow of water in response to a change in
the electrical signal.

15 2. The apparatus of claim 1, wherein the electrical signal utilizes a voltage of
less than 12 volts as a safety feature for reducing electrical shock hazards.

3. The apparatus of claim 1, the power supply including a main power supply
and a backup battery which allows operation of the system during periods of
20 inadequate power from the main power supply.

4. The apparatus of claim 1, said water ionization switch including:

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a container with openings to allow for water entry;
a first and second electrodes located within the container and separated by the compound.

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- 5 5. The apparatus of claim 1, said controlled valve assembly including:
an electric relay connected to the sensor;
a valve actuator connected to the relay;
a reset switch connected between the sensor and the relay.
6. The apparatus of claim 5, said controlled valve assembly further including a reset button connected to said reset switch.
7. The apparatus of claim 1, further comprising:
a condition indicator operatively connected to said ionization switch and said
15 power supply for indicating the operation of said valve assembly.
8. The apparatus of claim 7, wherein said condition indicator includes a light source.
- 20 9. A water ionization switch for detecting the presence of water, comprising:
a container with an interior, the container including at least one cover defining openings allowing water penetration of the interior of the container;

a first electrode contained within the interior;

a second electrode contained within the interior and spaced from the first electrode such that the electrodes do not make direct electrical contact; and

an electrolyte contained within said interior, and constrained only by the container, the amount of electrolyte and volume of the interior proportionally related such that the introduction of water into the interior of the container results in the formation of a conducting aqueous solution between the electrodes.

10. The water ionization switch of claim 9, the container including a two-inch diameter housing manufactured from a non-conductive material.

11. The water ionization switch of claim 9, the container shaped in a configuration selected from a configuration group including round, square, rectangular, triangular, ovoid, and spherical.

12. The water ionization switch of claim 9, the opening including a woven material mesh to allow for water entry.

13. The water ionization switch of claim 9, the electrodes mounted through a side of the container.

14. The water ionization switch of claim 9, wherein a moisture level of approximately 40% of the mass of the electrolyte is required to form the conductive solution.

5 15. The water ionization switch of claim 9, wherein the electrolyte is non-conductive while dry.

16. The water ionization switch of claim 9, wherein the electrolyte includes sodium chloride.

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